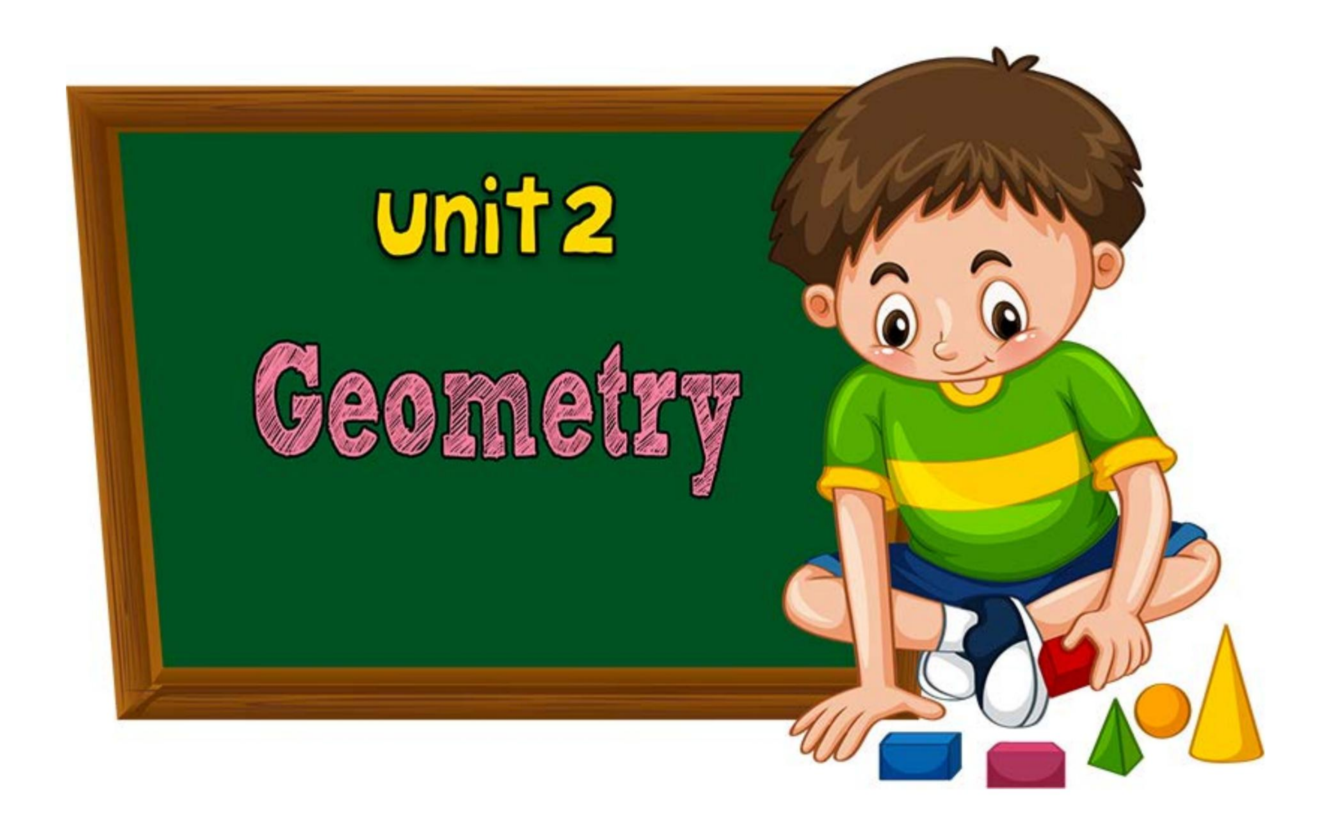
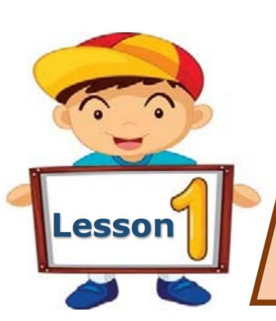

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Unit 2
Geometry




# The Perimeter

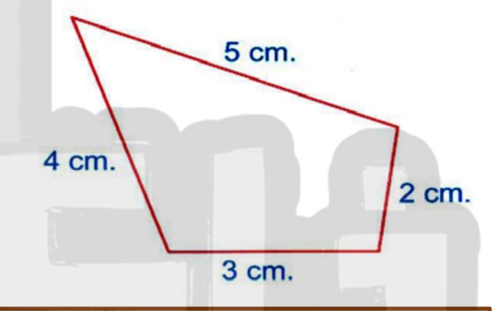
## Rule

- The Perimeter of any polygon equals the sum of its side lengths.

## FOR EXAMPLE

- The Perimeter of the polygon

  = 3 + 2 + 4 + 5 = 14 cm




- **The Perimeter of Square**

  = Side Length x 4

  = 3 x 4 = 12 cm

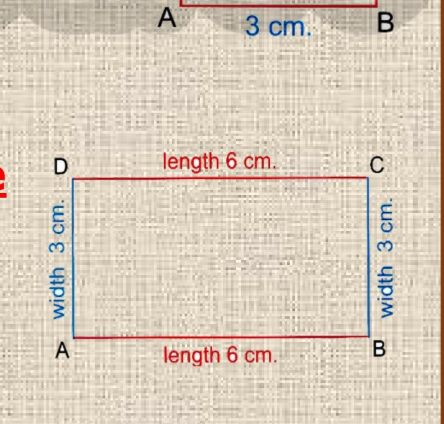


- **The Perimeter of Rectangle**

  = ( Length + Width ) x 2

  = ( 6 + 3 ) x 2

  = 9 x 2 = 18 cm





• El-Moasser Exercises

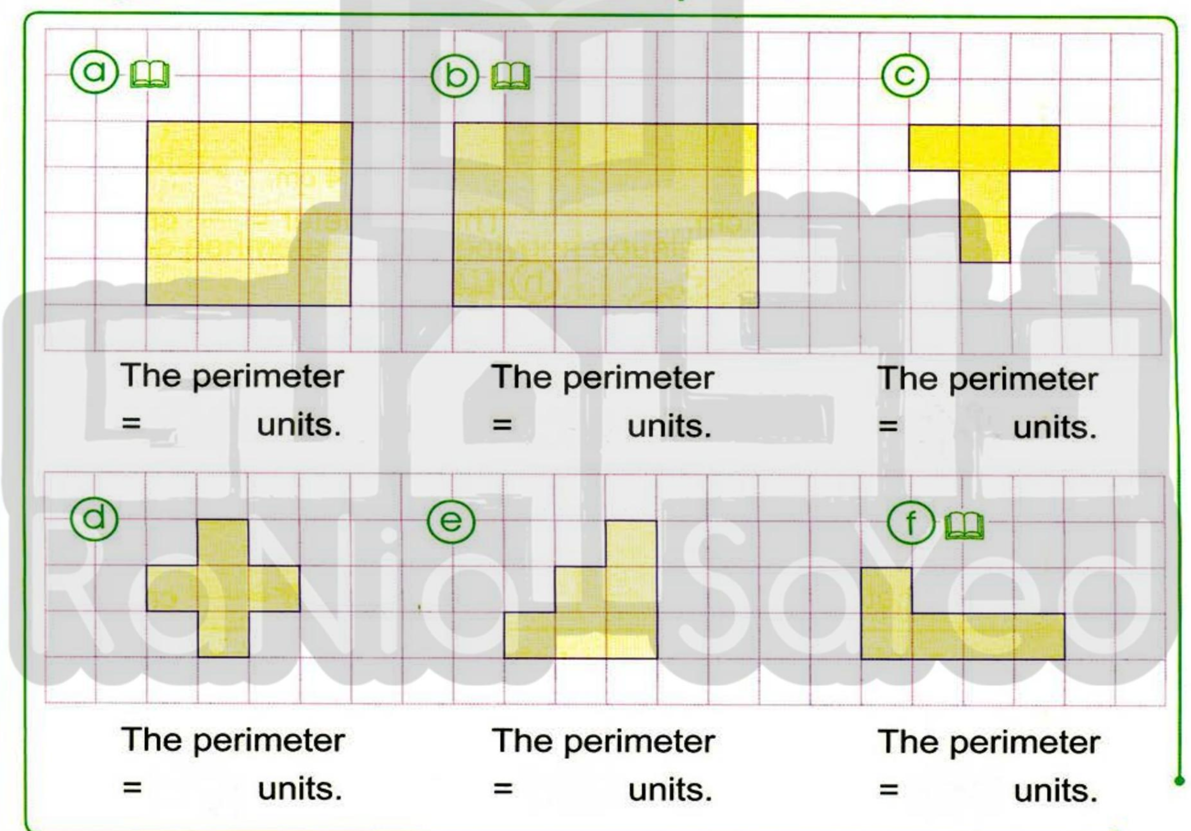
# Exercise 7

From the school book

First | Problems on the perimeter




1 Calculate the perimeter of each of the figures below (taking the length of the side of the smallest square as a unit) :




(a) The perimeter = units.

(b) The perimeter = units.

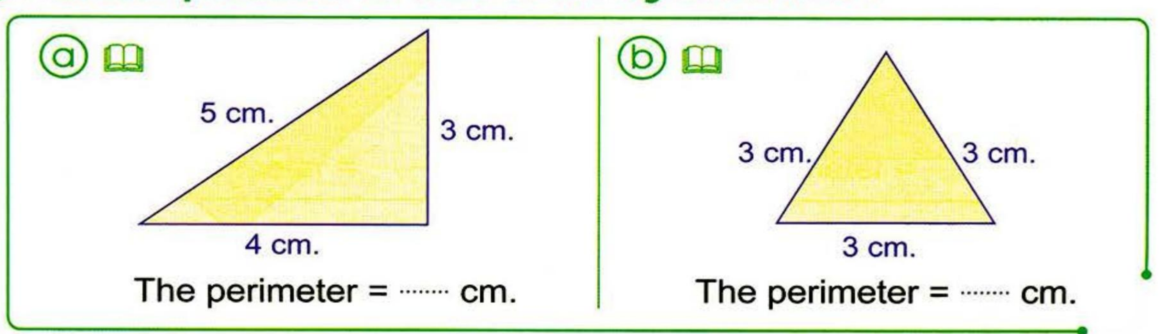
(c) The perimeter = units.

(d) The perimeter = units.

(e) The perimeter = units.

(f) The perimeter = units.

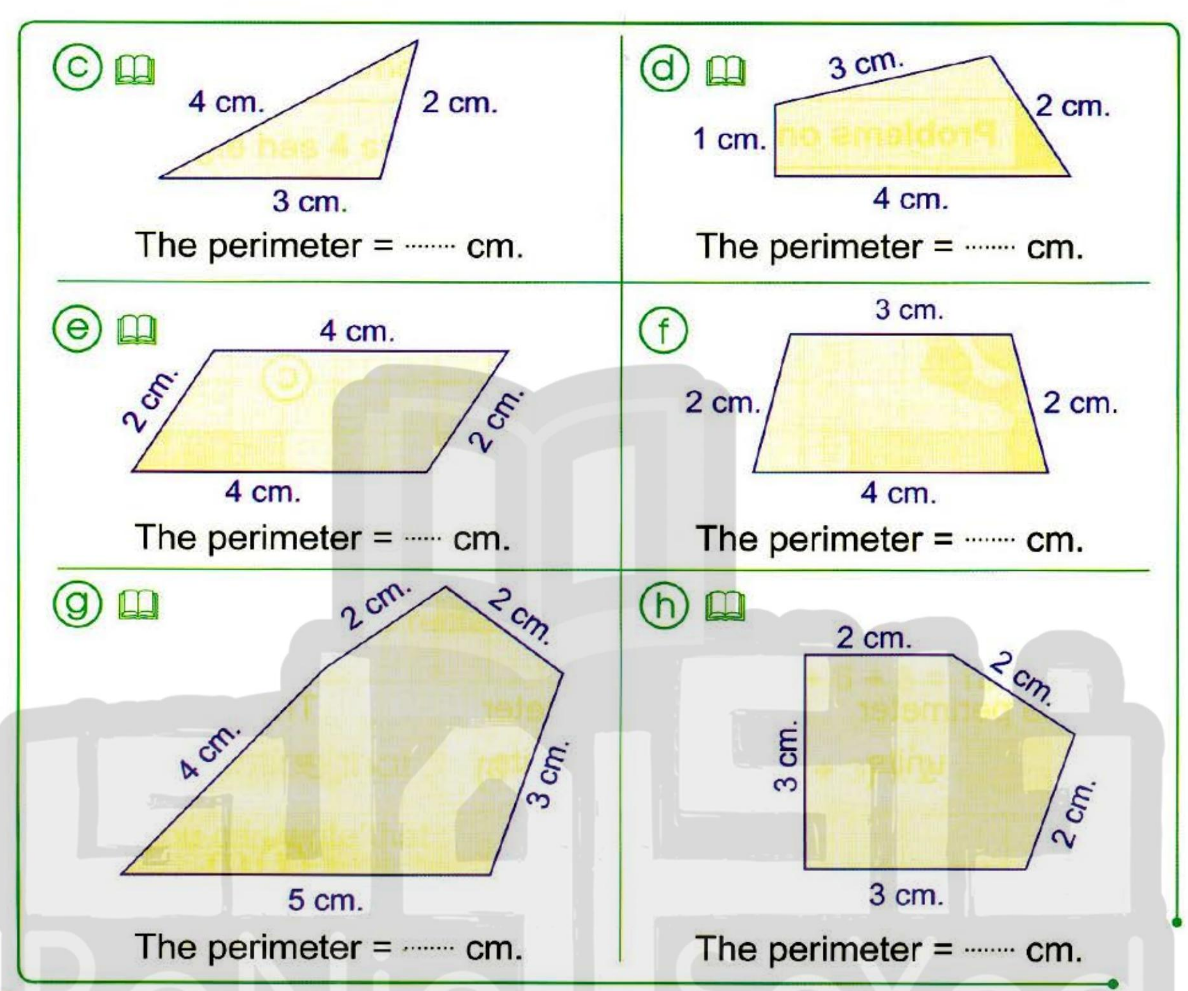
2 Find the perimeter of each of the figures below :



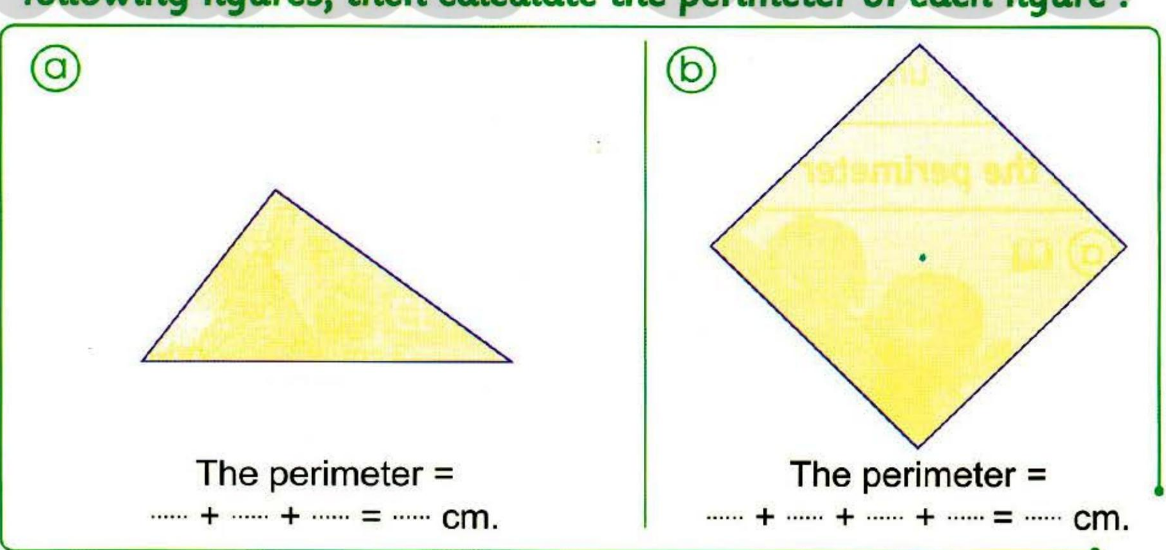

(a) The perimeter = ....... cm.

(b) The perimeter = ....... cm.




**3** **Use your ruler to measure the side lengths of each of the following figures, then calculate the perimeter of each figure :**

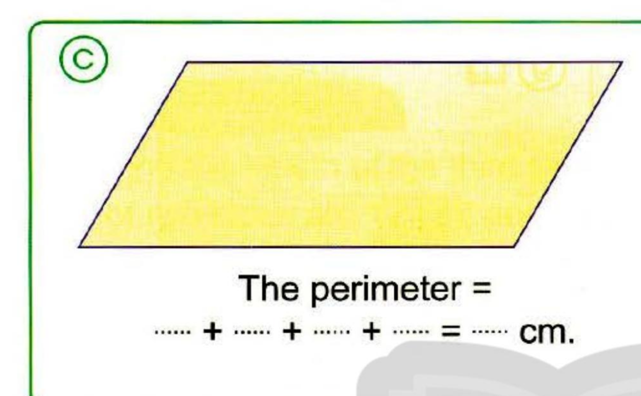






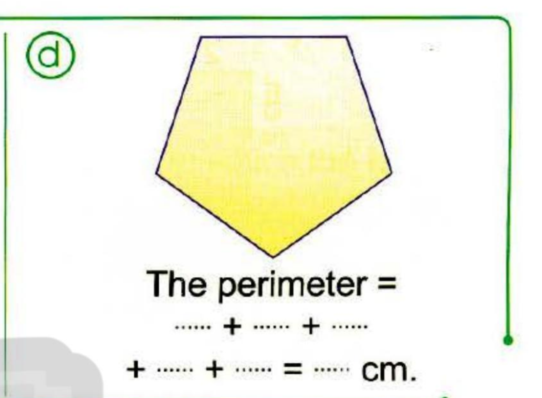


ⓒ



The perimeter =
...... + ...... + ...... + ...... = ...... cm.

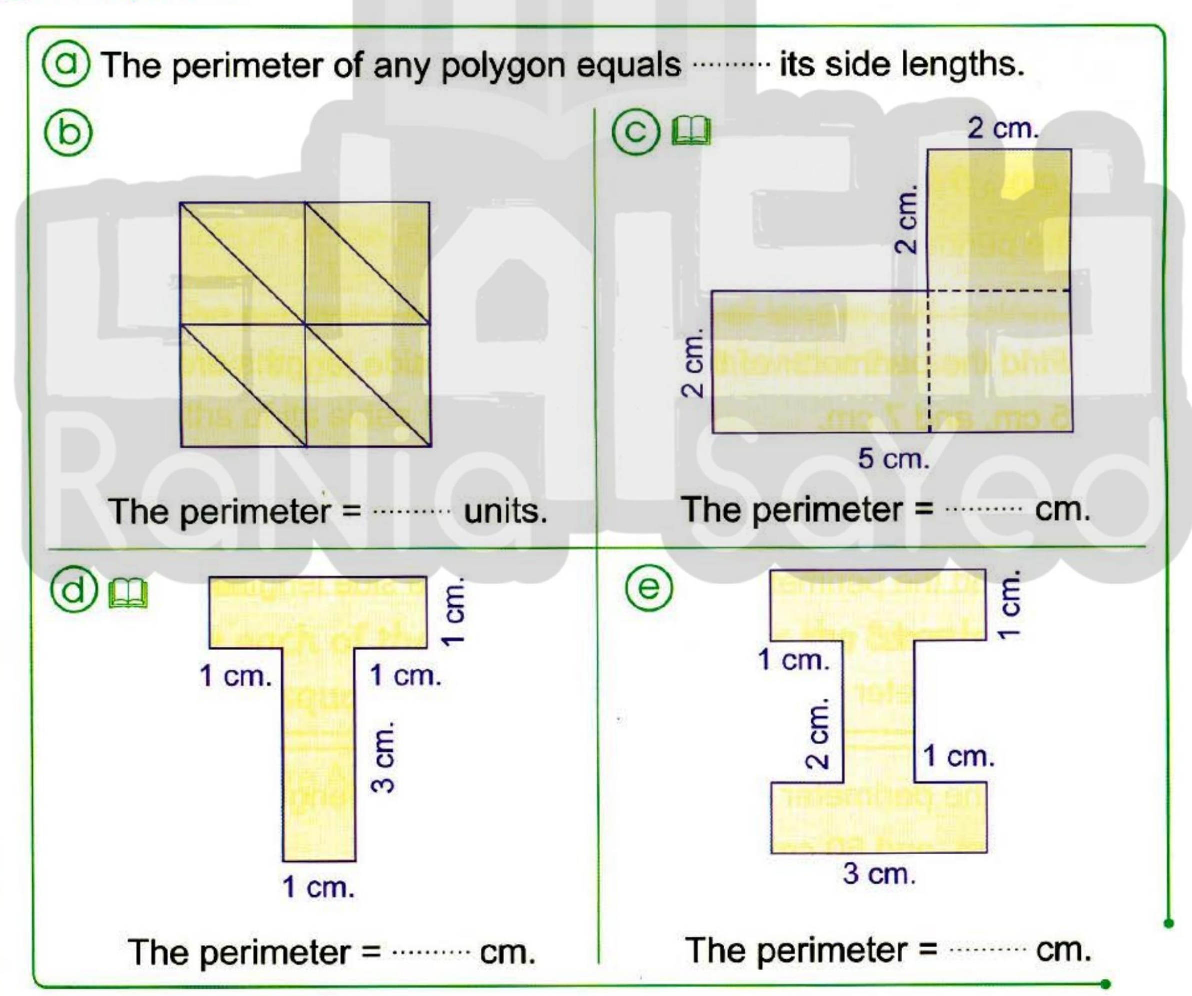
ⓓ



The perimeter =
...... + ...... + ......
+ ...... + ...... = ...... cm.

## 4 Complete :

ⓐ The perimeter of any polygon equals ......... its side lengths.




ⓑ The perimeter = ......... units.

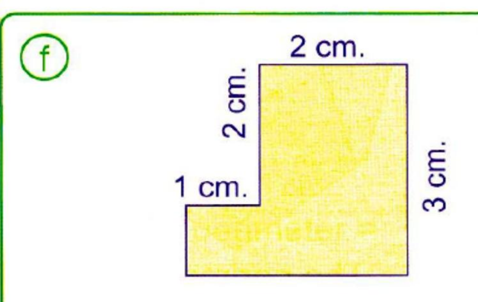
ⓒ The perimeter = ......... cm.

ⓓ The perimeter = ......... cm.

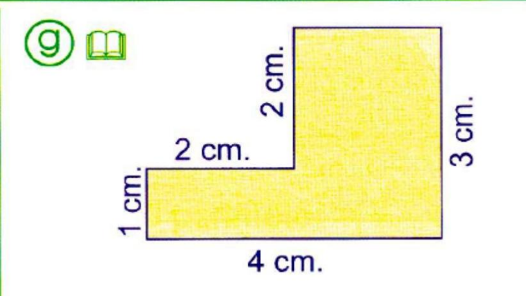
ⓔ The perimeter = ......... cm.








ⓕ The perimeter = ........ cm.




ⓖ The perimeter = ........ cm.

## 5 Find the perimeter as in the following example :

**Example :**

Find the perimeter of the triangle whose side lengths are 3 cm. , 5 cm. and 6 cm.

The perimeter = 3 + 5 + 6 = 14 cm.

ⓐ Find the perimeter of the triangle whose side lengths are 5 cm. , 5 cm. and 7 cm.

The perimeter = .............. + .............. + .............. = .......... cm.

ⓑ Find the perimeter of the triangle whose side lengths are 4 cm. , 5 cm. and 8 cm.

The perimeter = .............. + .............. + .............. = .......... cm.

ⓒ Find the perimeter of the triangle whose side lengths are 40 cm. , 50 cm. and 60 cm.

The perimeter = .............................................. = ..............






**6** **Find the length of the third side as in the following example :**

**Example :**

Find the length of the third side of the triangle in which the lengths of two sides are 12 cm. and 13 cm. , and its perimeter is 30 cm.

- The sum of the lengths of two sides = 12 + 13 = 25 cm.
- The length of the third side = 30 – 25 = 5 cm.

ⓐ Find the length of the third side of the triangle in which the lengths of two sides are 6 cm. and 5 cm. , and the perimeter is 21 cm.

- The sum of the lengths of two sides = ............ = ........ cm.
- The length of the third side = ............ = ........ cm.

ⓑ The perimeter of a triangle is 120 cm. If the sum of two of its side lengths is 70 cm. Find the length of the third side.

The length of the third side = ............ = ........ cm.

ⓒ The perimeter of a triangular piece of land is 200 metres. Find the length of its third side if you know that the sum of two lengths of its sides is 140 metres.

The length of the third side = ............ = ........ metres.




**Problems on perimeter of square and rectangle**

**7** **Complete each of the following (consider the length of the side of the small square is a unit of length) :**

ⓐ In the square ABCD :

- AB = 3 units
- BC = ........ units
- CD = ........ units
- DA = ........ units

- The perimeter of the square = ........ + ........ + ........ + ........

= ........ × 4 = ........ units










(b) In the rectangle ABCD :

- AB = 5 units
- BC = 3 units
- CD = ........ units
- DA = ........ units
- The perimeter of the rectangle = ........ + ........ + ........ + ........
  = (5 + 3) × 2 = ........ × 2 = ........ units

## 8 Complete each of the following :

(a) ABCD is a square.



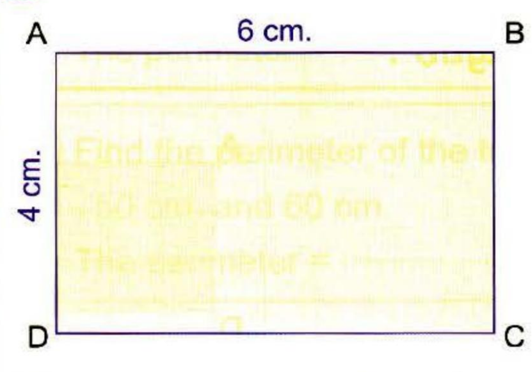

- The perimeter of the square
  = ........ × 4 = ........ cm.

(b) XYZM is a square.




- The perimeter of the square
  = ........ × 4 = ........ cm.

(c) ABCD is a rectangle.




- The perimeter of the rectangle
  = (...... + ......) × 2 = ...... × 2 = ...... cm.

(d) XYZM is a rectangle.

X Y

4 cm.

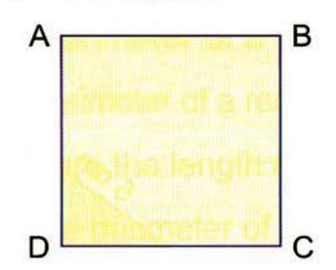
M 3 cm. Z

- The perimeter of the rectangle
  = (...... + ......) × 2 = ...... × 2 = ...... cm.



LESSON 1

(e) ABCD is a square.




- AB = ......... cm.
- The perimeter
= ............................ = ....... cm.

(f) ABCD is a rectangle.




- AB = ......... cm.
- BC = ......... cm.
- The perimeter
= ............................ = ....... cm.

9 Complete as in the example :

| | The length in cm. | The width in cm. | The perimeter = (length + width) × 2 |
|---|---|---|---|
| Ex | 5 cm. | 3 cm. | (5 + 3) × 2 = 16 cm. |
| (a) | 6 | 4 | ......................... |
| (b) | 7 | 3 | ......................... |
| (c) | 10 | 5 | ......................... |

10 Complete as in the example :

| | Side length in cm. | The perimeter of square = side length × 4 |
|---|---|---|
| Ex | 5 | 5 × 4 = 20 cm. |
| (a) | 7 | ......................................................... |
| (b) | 4 | ......................................................... |
| (c) | 10 | ......................................................... |

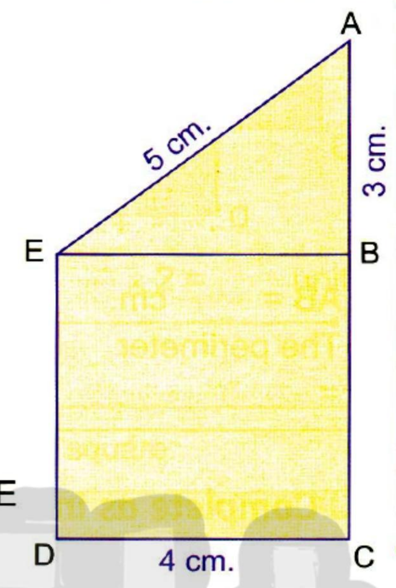



**11** **Answer the following with the help of the figure :**

ⓐ **In the opposite figure :**

BCDE is a square where AB = 3 cm.

, AE = 5 cm. and CD = 4 cm.




Calculate :

(1) The perimeter of the square BCDE

= ........................................ = .......... cm.

(2) The perimeter of the triangle ABE

= ........................................ = .......... cm.

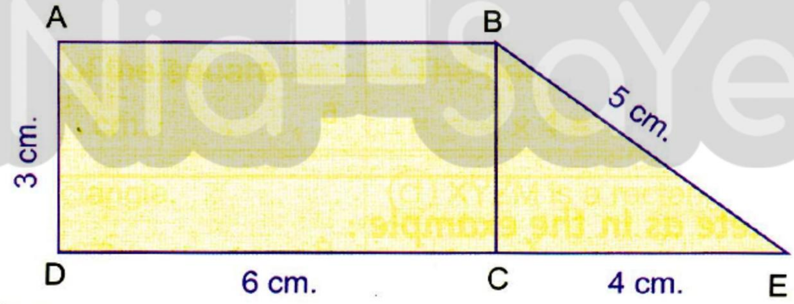
(3) The perimeter of the whole shape ACDE

= ........................................ = .......... cm.

ⓑ **In the following figure :**

ABCD is a rectangle where AD = 3 cm.

, DC = 6 cm. , CE = 4 cm. and EB = 5 cm.




Calculate :

(1) The perimeter of the rectangle ABCD = .......... cm.

(2) The perimeter of the triangle BCE = .......... cm.

(3) The perimeter of the shape ABED = .......... cm.

LESSON 1




## 12 Complete :



ⓐ The perimeter of a square = .................... × ....................

ⓑ The perimeter of a rectangle = (.................... + ....................) × ....................

ⓒ A square the length of its side is 3 cm. , then its perimeter = ......... cm.

ⓓ 📖 The perimeter of the square whose side length is 1 cm. = ......... cm.

ⓔ 📖 The perimeter of the rectangle whose length is 8 cm. , and its width is 4 cm. = ......... cm.

ⓕ 📖 The perimeter of the rectangle whose dimensions are 16 cm. , 10 cm. = ......... cm.

ⓖ 📖 The perimeter of the rectangle whose length is 2 m. and its width 150 cm. = ......... cm.

## 13 Complete the following table :

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| The side length of a square (cm.) | 2 | 3 | 5 | ....... | 8 | ....... | 15 | ....... |
| The perimeter of this square (cm.) | 8 | 12 | ....... | 24 | ....... | 40 | ....... | 84 |

## 14 Find :

ⓐ 📖 Find the perimeter of a square of side length is 7 cm.

The perimeter = .................................................................... = ......... cm.

ⓑ 📖 Find the perimeter of a rectangle of length 7 cm. and width 3 cm.

The perimeter = .................................................................... = ......... cm.

ⓒ Find the perimeter of a square of side length 5 cm.

The perimeter = .................................................................... = ......... cm.

ⓓ Find the perimeter of a rectangle whose length is greater than its width by 3 cm. , if its width is 2 cm.

The perimeter = .................................................................... = ......... cm.




**15** Put the suitable sign ( > or < or = ) :

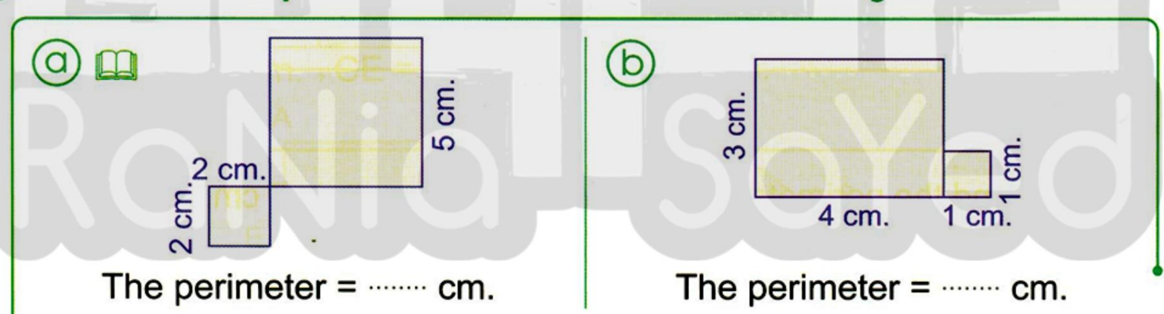
ⓐ The perimeter of square (4 cm.) ...... the perimeter of triangle (6 cm., 4 cm., 3 cm.)

ⓑ The perimeter of rectangle (6 cm., 4 cm.) ...... the perimeter of square (5 cm.)

ⓒ The perimeter of triangle (6 cm., 6 cm., 6 cm.) ...... the perimeter of rectangle (5 cm., 3 cm.)

ⓓ The perimeter of figure (1 cm.) ...... the perimeter of figure (1 cm.)

**16** Calculate the perimeter of each of the following :

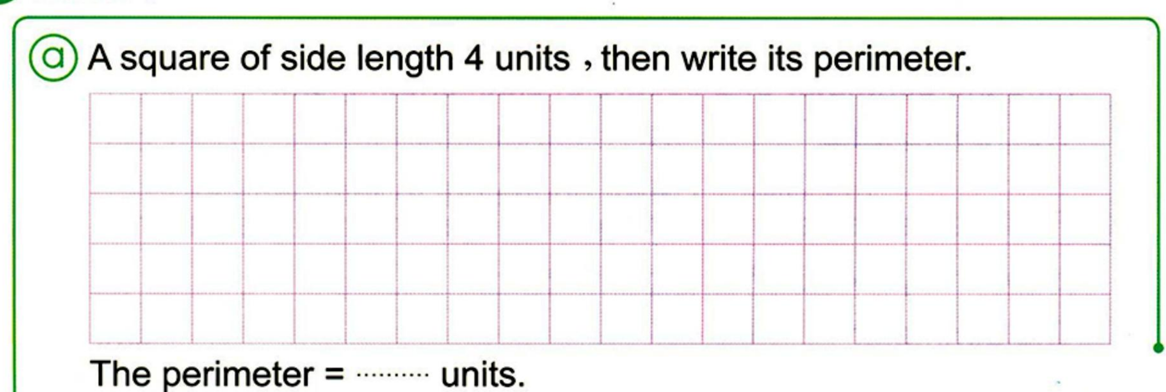



ⓐ The perimeter = ······· cm.

ⓑ The perimeter = ······· cm.

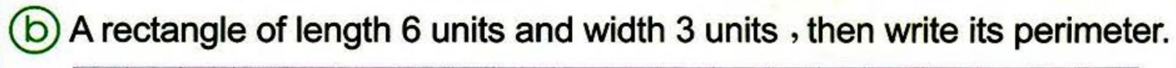
**17** Draw :

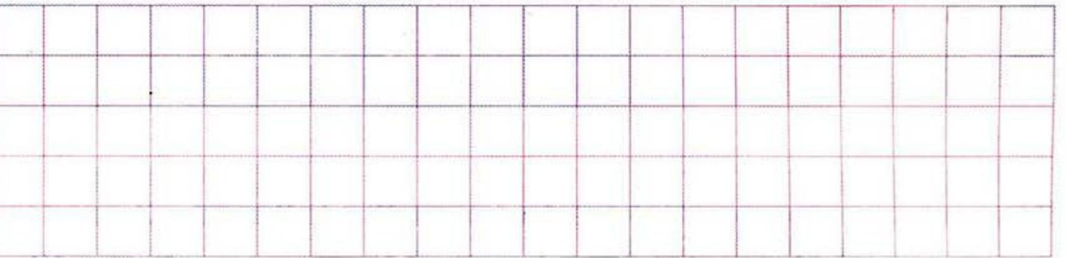
ⓐ A square of side length 4 units , then write its perimeter.



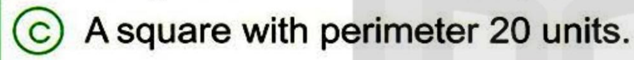
The perimeter = ········ units.


LESSON 1


ⓑ A rectangle of length 6 units and width 3 units , then write its perimeter.



The perimeter = ......... units.

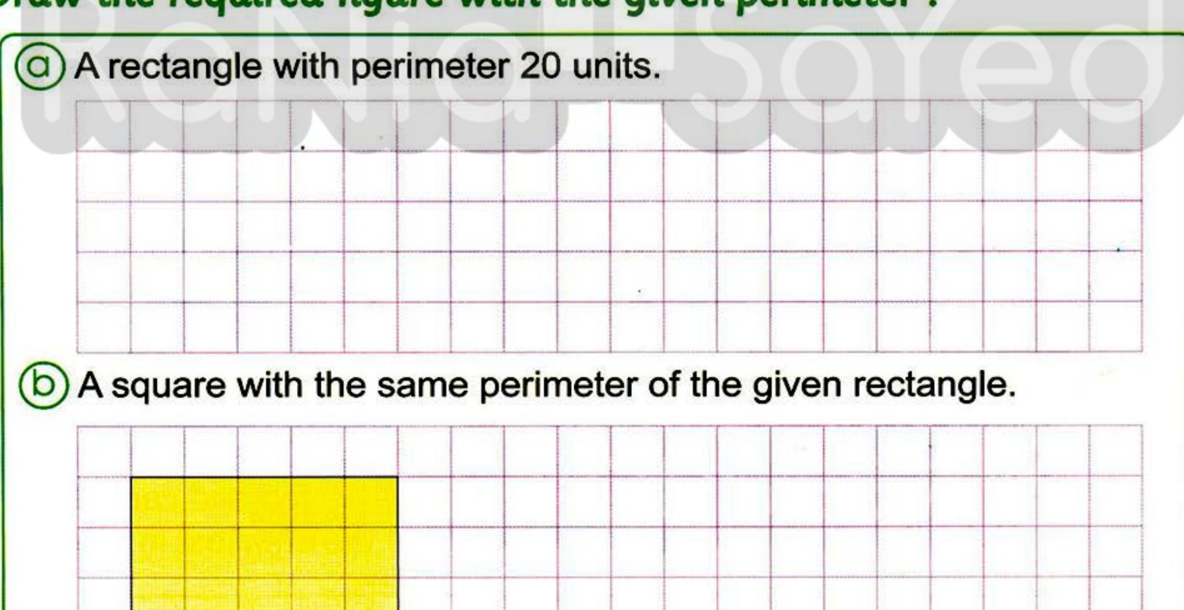

ⓒ A square with perimeter 20 units.

## Think And Answer

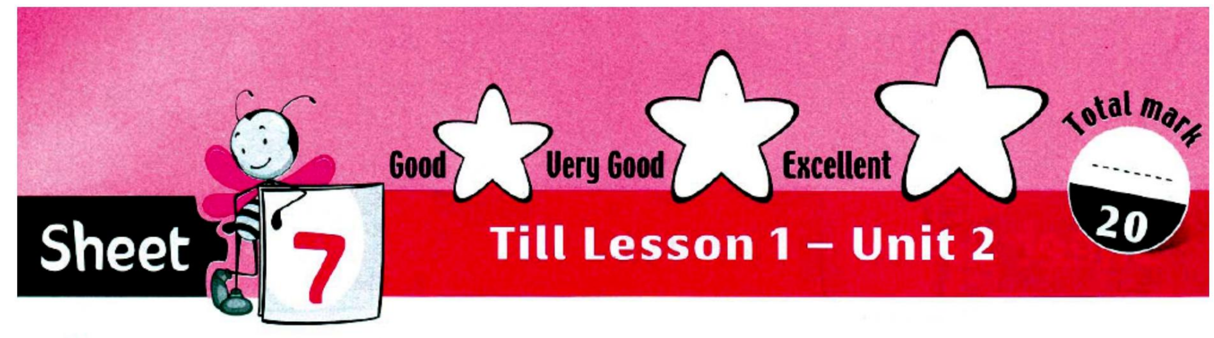
**Draw the required figure with the given perimeter :**

ⓐ A rectangle with perimeter 20 units.

ⓑ A square with the same perimeter of the given rectangle.



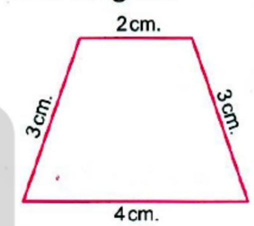





**1** **Complete each of the following :**

**(1)** The perimeter of any polygon is ......... of its side lengths.

**(2)** The perimeter of the opposite figure = ............ cm.







**(3)** The perimeter of a triangle of side lengths 6 cm. , 8 cm. and 10 cm. is ......... cm.

**(4)** The perimeter of square whose side length 6 cm. = ......... cm.

**2** **Choose the correct answer :**

**(1)** The perimeter of rectangle whose length 8 cm. , and its width 5 cm. = .......... cm.

( 13 **or** 20 **or** 26 **or** 24 )

**(2)** The perimeter of square = side length × .........

( 0 **or** 2 **or** 3 **or** 4 )

4

**(3)** The perimeter of a triangle is 12 cm. , if the sum of two of its sides is 9 cm. , then the length of the third side is ......... cm.

( 21 **or** 6 **or** 4 **or** 3 )

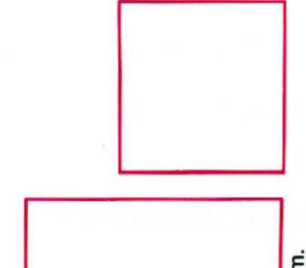
**(4)** 903 ÷ 3 = ..........

( 31 **or** 13 **or** 301 **or** 300 )

**3** **Complete :**

**(1)** The perimeter of the opposite square = ......... cm.

**(2)** The perimeter of the opposite rectangle equals ......... cm.









**(3)** The perimeter of

the opposite figure = ......... cm.




**(4)** The perimeter of rectangle whose length 2 m.

and its width 150 cm. = ......... cm.

**4** ***A triangular shaped piece of land its perimeter is 120 m.***

***If its side lengths are equal. Find the side length of it.***

The side length = ........................................................ = .............. m.



**5** ***Which is the greatest ?***

The perimeter of a square of side length 25 cm. , the perimeter of a rectangle of length 30 cm. and width 15 cm.

*or* the perimeter of a triangle of side lengths 23 cm. , 39 cm. and 33 cm. ?



The perimeter of the square = ............................................ = .......... cm.

The perimeter of the rectangle = ............................................ = .......... cm.

The perimeter of the triangle = ............................................ = .......... cm.

The greatest is ................

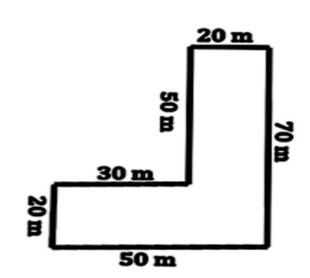
# • Zakroly Worksheet on Lesson 1

**1. Complete :**

a) The perimeter of the opposite figure

= ..... + ..... + ..... + ..... + ..... + .....

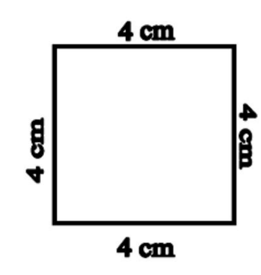
= ...... m




b) The perimeter of the square

= ........................

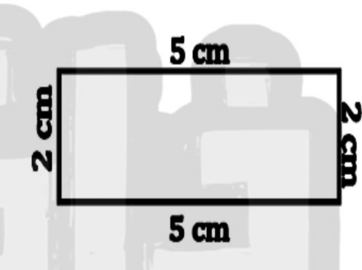
= ...... cm




c) The perimeter of the rectangle

= ........................

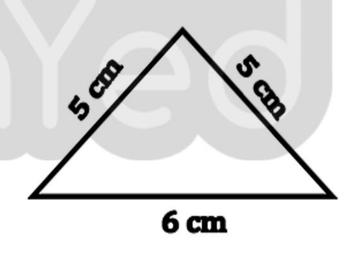
= ...... cm




d) The perimeter of the triangle

= ........................

= ...... cm




**2. Choose the correct answers :**

a) A square has a length = 5 cm. Its perimeter = ..... cm

( 20 - 25 - 30 )

b) If the dimension of a rectangle is 7 cm and 4 cm, then its perimeter = ...... cm

( 33 - 28 - 22 )



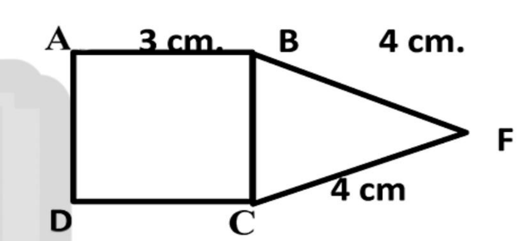
c) An equilateral triangle has its length equals 8 cm. Its perimeter equals ...... cm

( 24 - 8 - 16 )

d) If the perimeter of a square is 120 cm, then its length = ...... cm

( 12 - 40 - 30 )

## 3. In the opposite figure:




- The perimeter of the square ABCD = ..................... cm
- The perimeter of the triangle BCF = ....................... cm
- The perimeter of the shape ABFCD = ............................ cm

## 4. The perimeter of a triangle is 15 cm. if the sum of two of its sides is 11 cm, calculate the length of the third side.

The length of the third side = ............................. cm






# The Area

## Rule

- The Area of a shape equals the number of units inside that shape.

## FOR EXAMPLE

- The number of small squares in the Shape equals 10 squares.

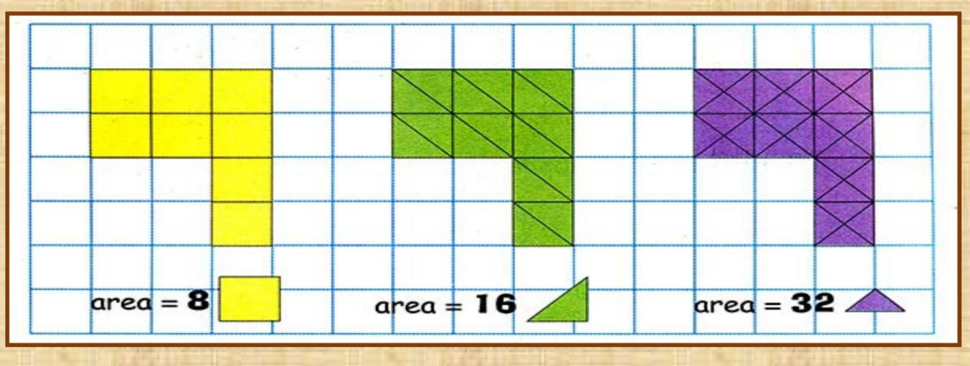
  So, the area of the shape = 10 units.

| | | |
|---|---|---|
| 1 | 2 | |
| 3 | 4 | 5 |
| 6 | 7 | 8 |
| 9 | 10 | |

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## Note

- The area of a shape depends on the used unit. If this unit is changed, the area of the shape changed too.





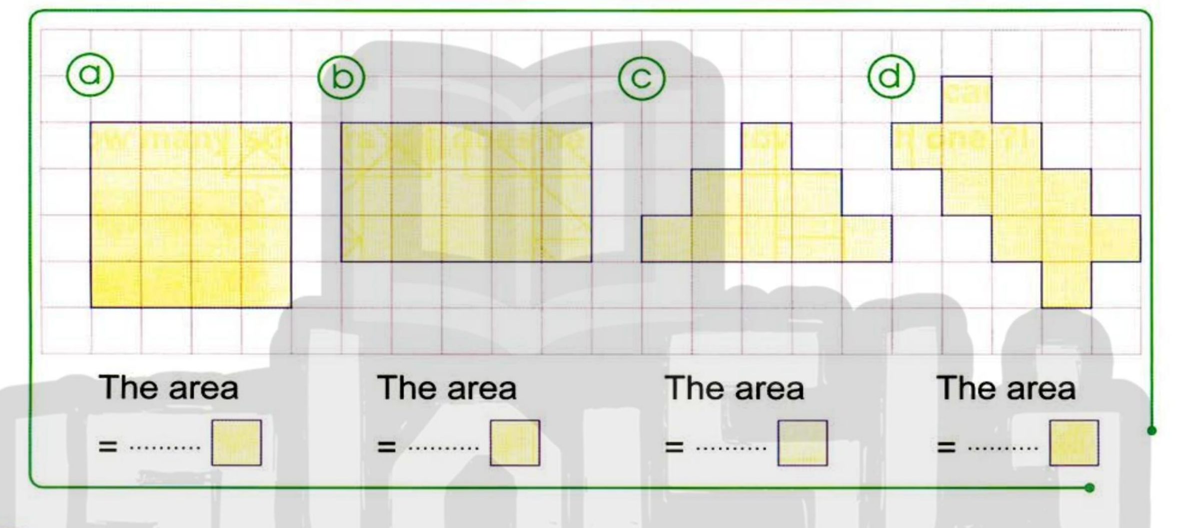



• El-Moasser Exercises

# Exercise 8

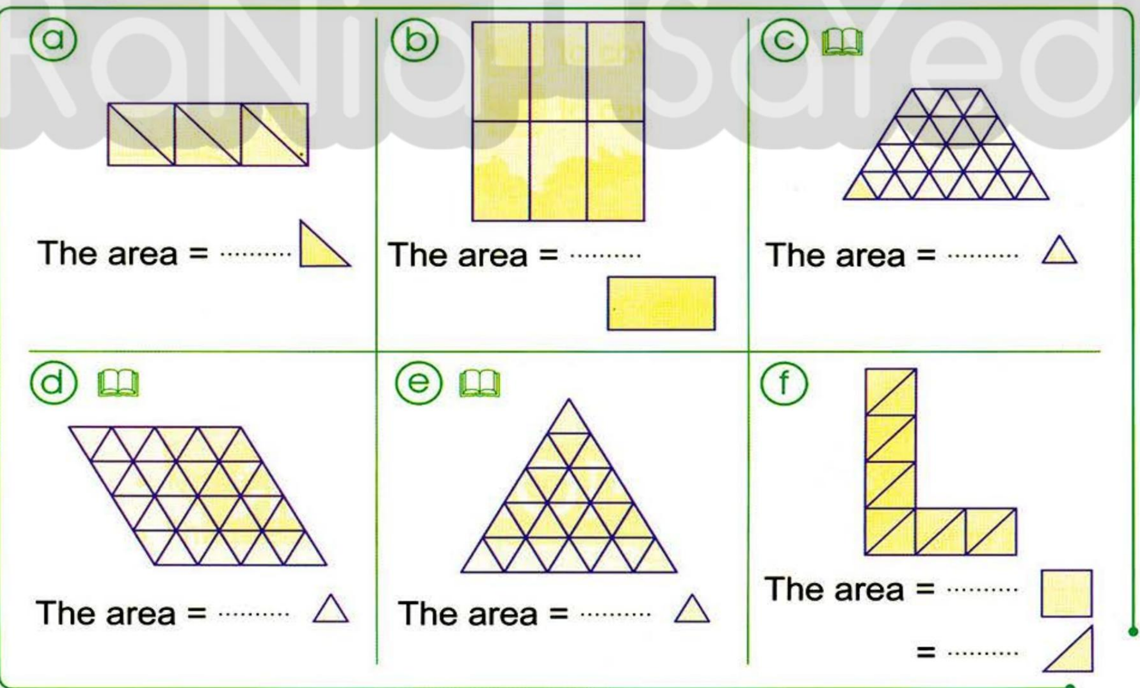
From the school book

1 Calculate the area of each of the following figures (consider the area of the small square as a unit) :



ⓐ The area = .......... □
ⓑ The area = .......... □
ⓒ The area = .......... □
ⓓ The area = .......... □

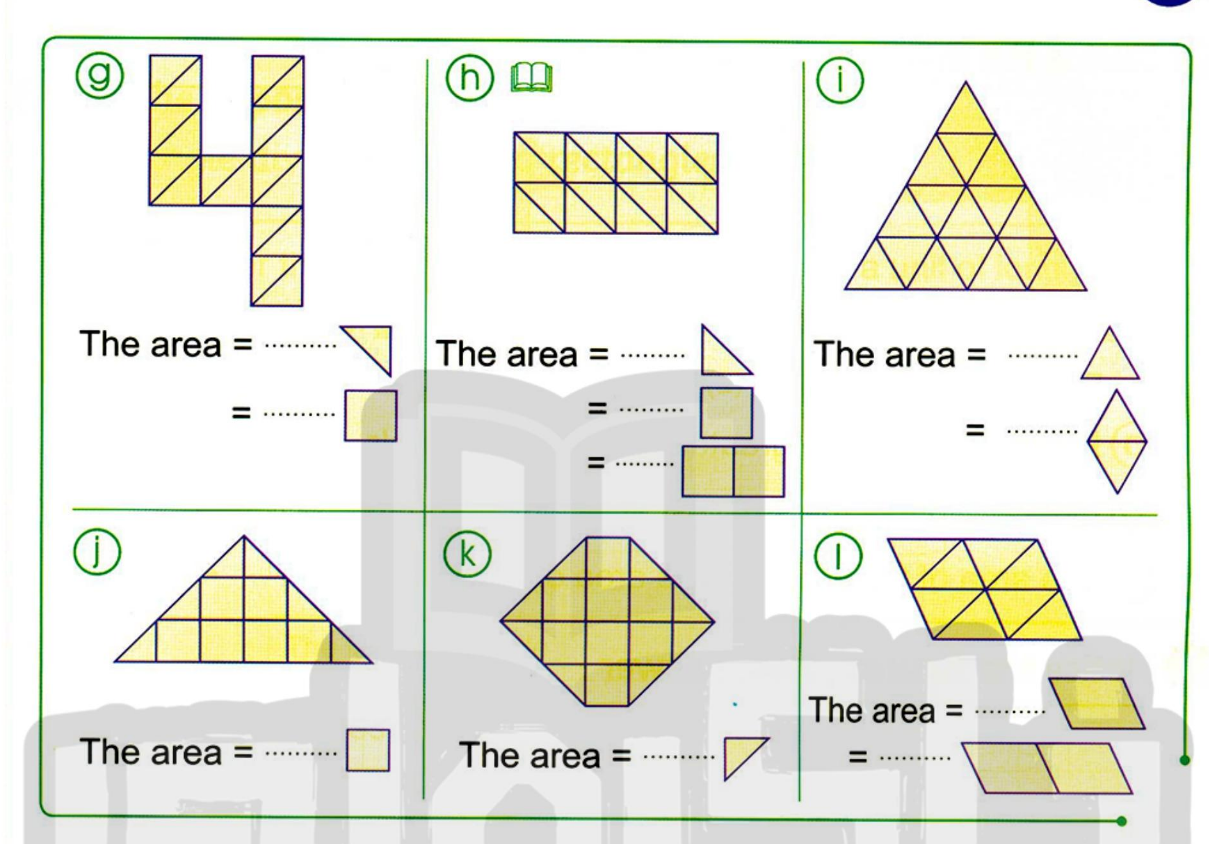
2 Find the area of each of the following figures according to the given unit :



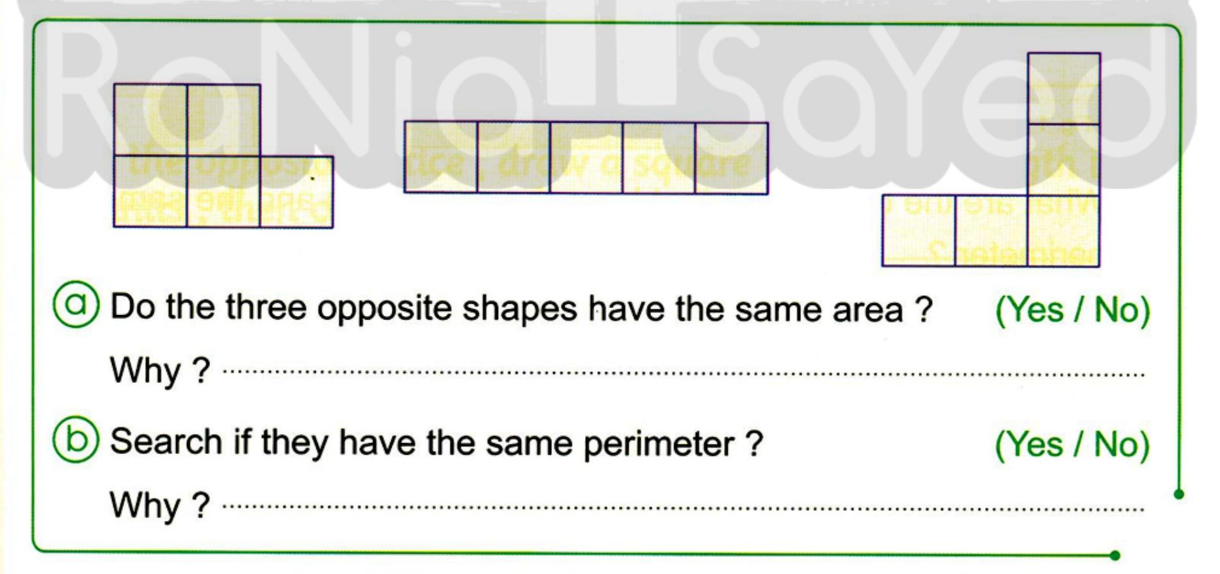
ⓐ The area = .......... ◺
ⓑ The area = .......... ▭
ⓒ The area = .......... △
ⓓ The area = .......... △
ⓔ The area = .......... △
ⓕ The area = .......... □
= .......... ◺



LESSON 2




**3** *In the following figures :*



ⓐ Do the three opposite shapes have the same area ? (Yes / No)

Why ? ..............................................................................................

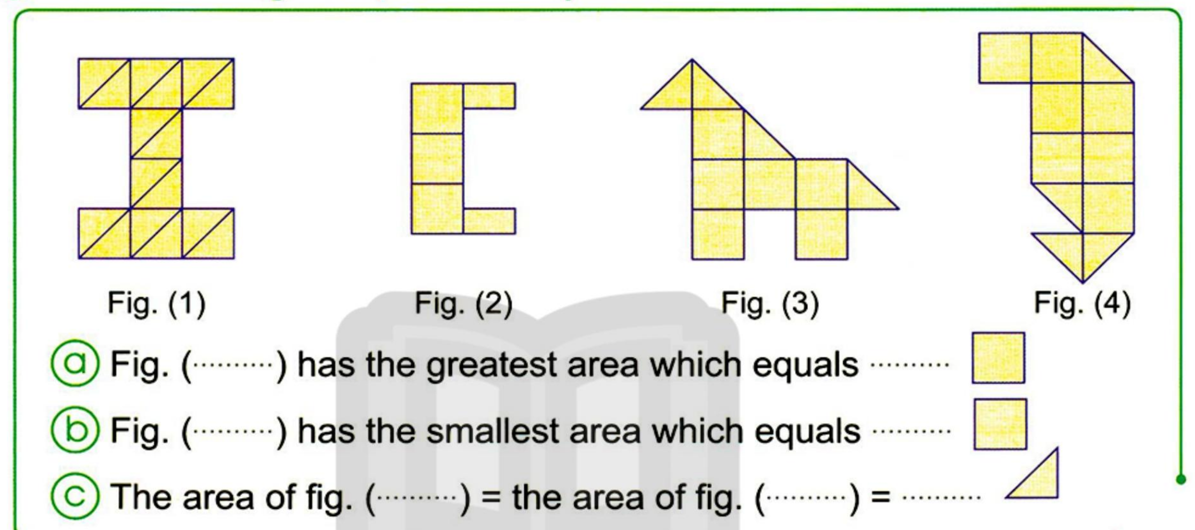
ⓑ Search if they have the same perimeter ? (Yes / No)

Why ? ..............................................................................................





**4** **Notice the figures , then complete :**

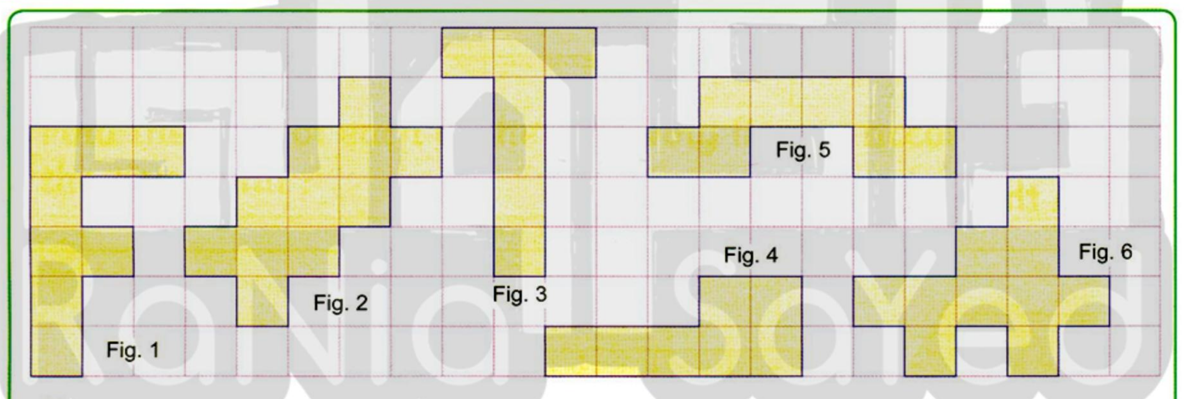



ⓐ Fig. (.........) has the greatest area which equals .........

ⓑ Fig. (.........) has the smallest area which equals .........

ⓒ The area of fig. (.........) = the area of fig. (.........) = .........

**5** **Notice the figures , then answer :**




ⓐ What are the two figures that have the same area and the same perimeter ?

Fig. (.........) and Fig. (.........)

ⓑ What are the two figures that have the same area but not the same perimeter ?

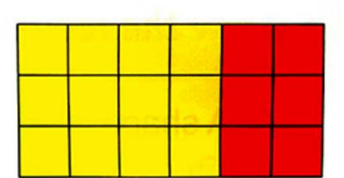
Fig. (.........) and Fig. (.........)

ⓒ What are the two figures that have the same perimeter but not the same area ?

Fig. (.........) and Fig. (.........)






LESSON 2

**6** **The opposite figure represents a large rectangle divided into two rectangles :**

ⓐ Consider the length of the small square's side a unit of length and the area of the small square a unit of area then complete the following table :

| | Perimeter | Area |
|---|---|---|
| The red rectangle | .......... | .......... |
| The yellow rectangle | .......... | .......... |
| The large rectangle | .......... | .......... |

ⓑ Answer with Yes or No and explain why :

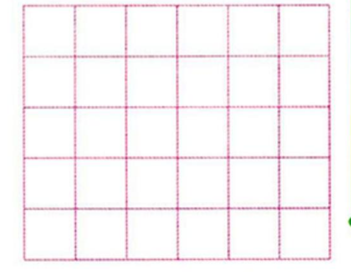
(1) The perimeter of the large rectangle = the sum of the perimeters of the two rectangles (Yes / No)

(2) The area of the large rectangle = the sum of the areas of the two rectangles (Yes / No)

**7** **On the opposite lattice , draw a square whose side length is 3 units , then complete :**

ⓐ The perimeter of the square = .......... units.

ⓑ The area of the square = .......... ☐



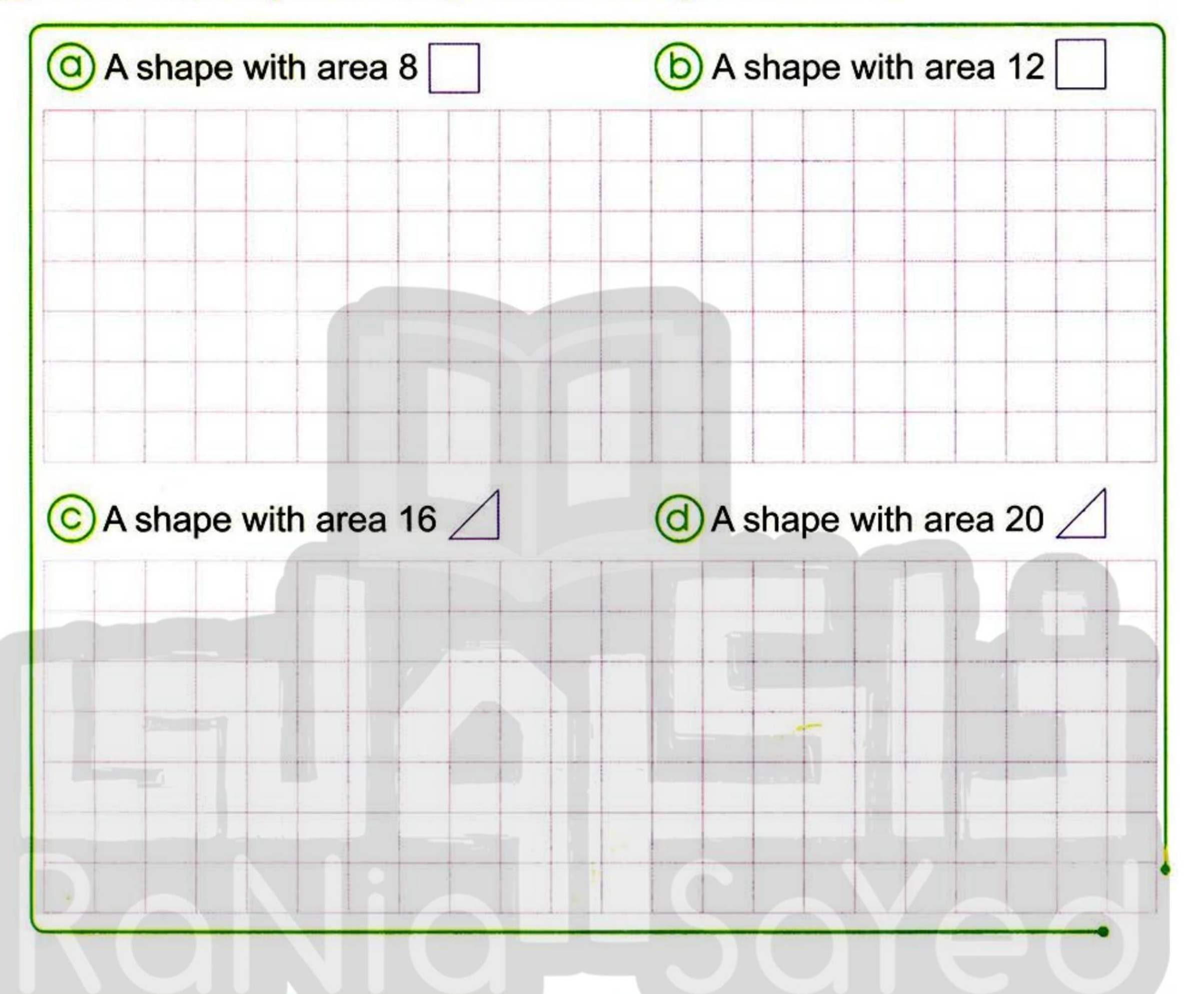








**8** Draw the required shapes with the given areas :



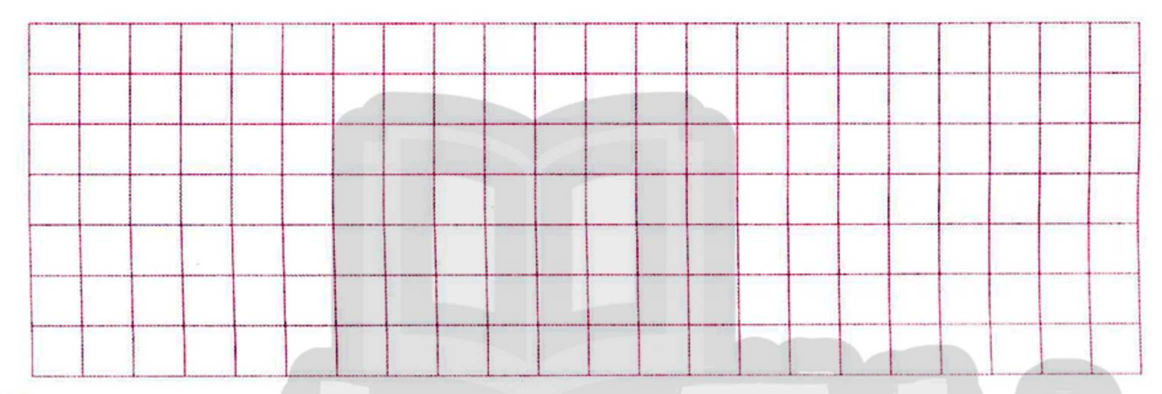




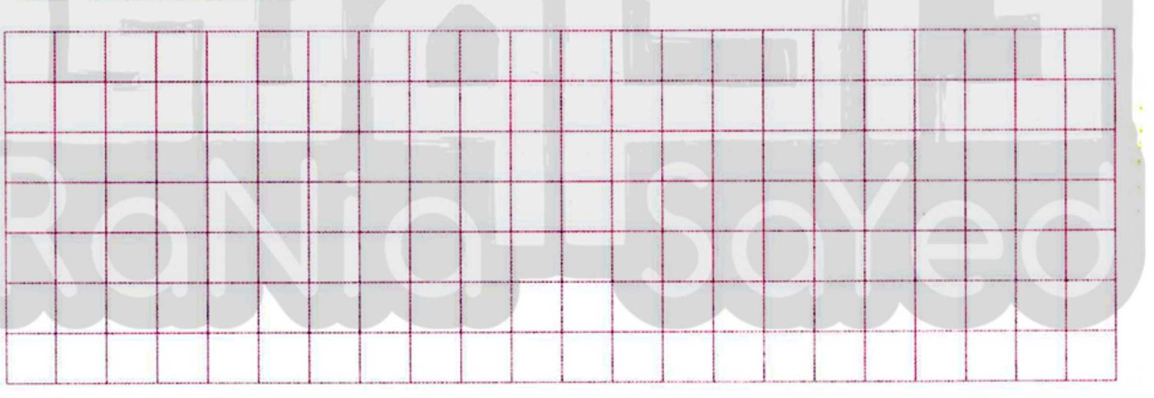

LESSON 2

# Think And Answer

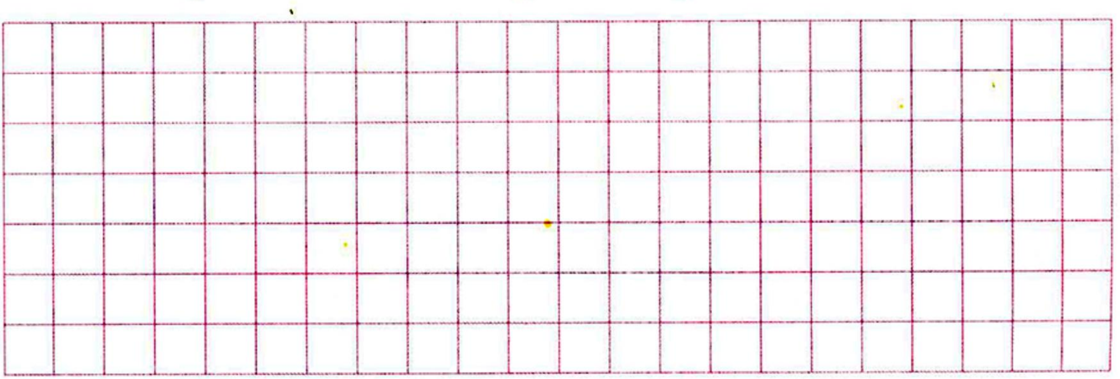
**a** Draw two shapes having the same area but not the same perimeter :



**b** Draw two shapes having the same perimeter but not the same area :



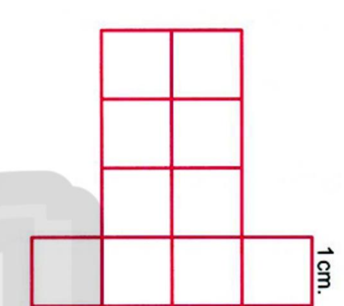
**c** Draw a square and a rectangle having the same area :






**1** **Complete each of the following :**

**(1) In the opposite figure :**







(a) The perimeter = ......... cm.

(b) The area = ......... 

(2) $4 \times 3 \times 1\ 000 =$ .........

(3) ......... $\div 3 = 203$

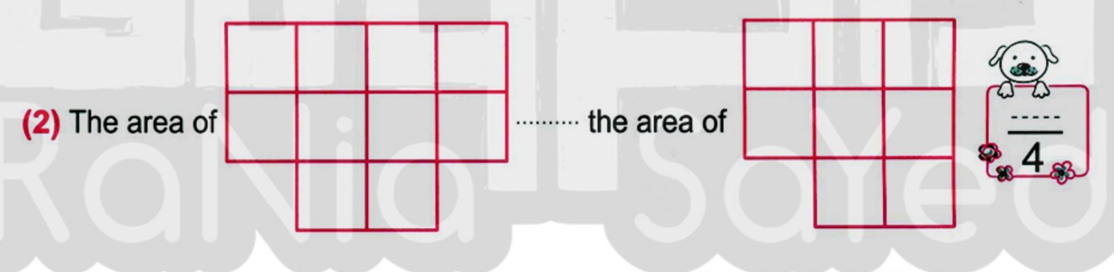
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**2** **Choose the correct answer :**

(1) $5\ 050 \div 5 =$ .........

( 1 001 or 1 100 or 1 010 or 101 )

(2) The area of ......... the area of




( < or = or > )

(3) $232 \times$ ......... $= 23\ 200$ ( 100 or 10 or 1 000 or 101 )

(4) The area of the opposite figure

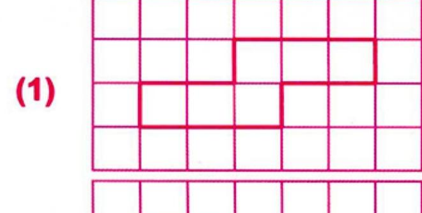
equals .........

( 7 or 8 or 9 or 10 )



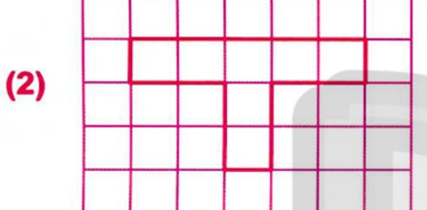
**3** **Match each figure with its equal area :**

(1)



(a) 12 ☐

(2)



(b) 9 ☐




(3)



(c) 7 ☐

(4)



(d) 6 ☐

**4** **Find the perimeter and the area of each of the following figures :**

(1)



The perimeter = ........ units.

The area = ........



(2)

The perimeter = ........ units.

The area = ........ ☐




**5** **A primary school has 9 classes with equal number of pupils in each. If the whole number of pupils is 450 pupils.**

**How many pupils are there in each class ?**

The number of pupils in each class = ........................ = .............. pupils.





# • Zakroly Worksheet on Lesson 2

**1. Find :**

| | |
|---|---|
| The area = ........ | The area = ........ |
| The area = ........ | The area = ........ |
| The area = ........<br>= ........ | The area = ........<br>= ........ |

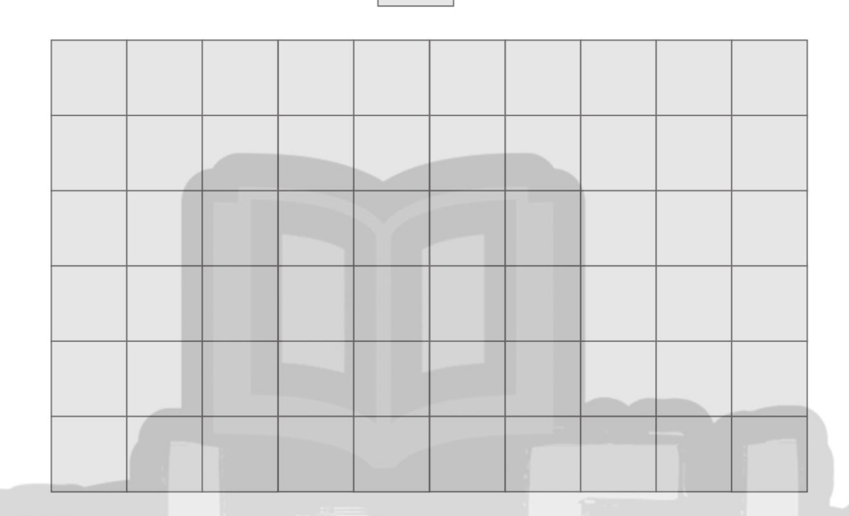


2. On the lattice, draw the rectangle ABCD in which AB = 8 cm and BC = 5 cm. Then, complete:

CD = ........... cm AD = ........... cm

The perimeter = ........................................ cm

The area = ...........



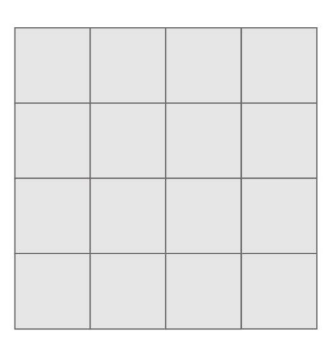
3. On the lattice, draw the square WXYZ in which WX = 3 cm. Then, complete:

XY = ........... cm YZ = ........... cm

WZ = .......... cm

The perimeter = ........................................ cm

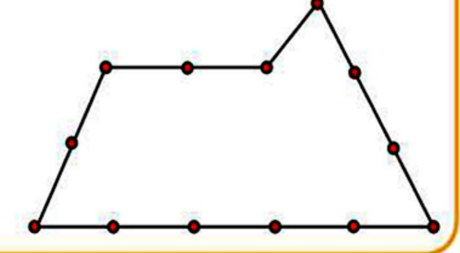
The area = ...........





# • School Book Exercises on Unit 2

**(1)** Find the perimeter of this shape if you know that the distance between each two points is 1 centimetre long



**(2)** Find the area of the opposite shape according to the given unit

Area of the shape = ..................

= ..................

= ..................

**(3)** **( a )** Find the perimeter of a square whose side length is 3 cm.

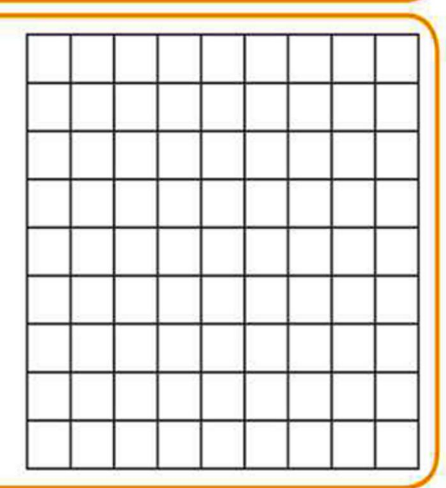
the perimeter of the square = .............................. = .............. cm

**(b)** Find the perimeter of a triangle whose sides are 5 cm, 7 cm, and 10 cm.

The perimeter of the triangle = .............................. = .............. cm

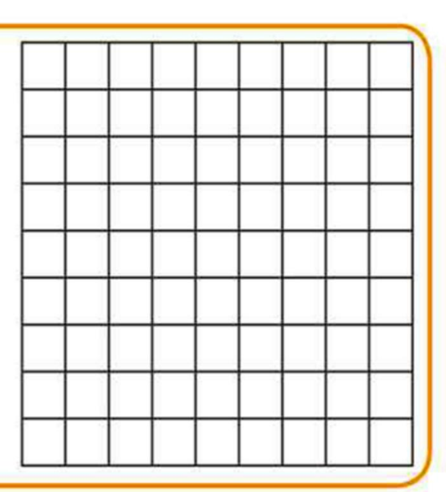
**(4)** On the opposite lattice: Draw a shape with a perimeter of 8 units of length.

(Consider the length of the small square's side a unit of length and its area a unit of area)






(5) On the opposite lattice: Draw a shape with area of 8 square units.
(Consider the length of the small square's side a unit of length and its area a unit of area)



(6) In the following figure calculate the perimeter of the figure in cm

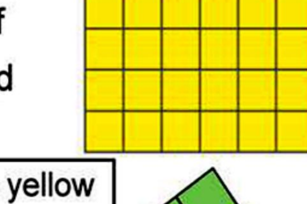
10 cm
1 cm
2 cm
4 cm
1 cm
6 cm

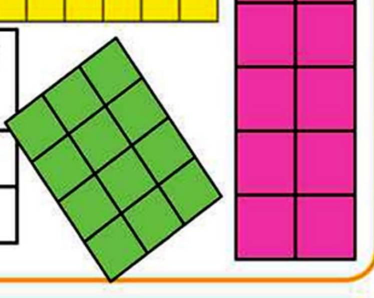
(7) In the opposite figure A B C D is square, B C = 4 cm
A E = 3 cm , E D = 5 cm.
Calculate its perimeter of the figure

E
5 cm
3 cm
D
A
C
B
4 cm

# • School Book Activities on Unit 2

**(1)** Find the perimeter and area of each of the rectangle in the opposite figure and complete the following table:





| | The red rectangle | The green rectangle | The yellow rectangle |
|---|---|---|---|
| Perimeter | ............... | ............... | ............... |
| Area | ............... | ............... | ............... |

**(2)** Find the perimeter and the area of the opposite shape according to the given unit:

The perimeter = ............... units

(Consider the length of the small square`s side a unit)

The area = ............... □ = ............... □□ = ...............



**(3)** The opposite shape represents a square divided into seven shapes numbered 1 to 7.

Consider the area of shape (1) a unit of area and:

**( a )** Find the area of the rest of the shapes and complete the following table:

| Shape | 1 | 2 | 3 | 4 | 5 | 6 | 7 | the large square |
|---|---|---|---|---|---|---|---|---|
| Its area | 1 | ......... | ......... | ......... | ......... | ......... | ......... | ......... |

**(b)** Write the number of:

Two shapes congruent: ............... and ...............

Another two shapes that are congruent : ............... and ...............

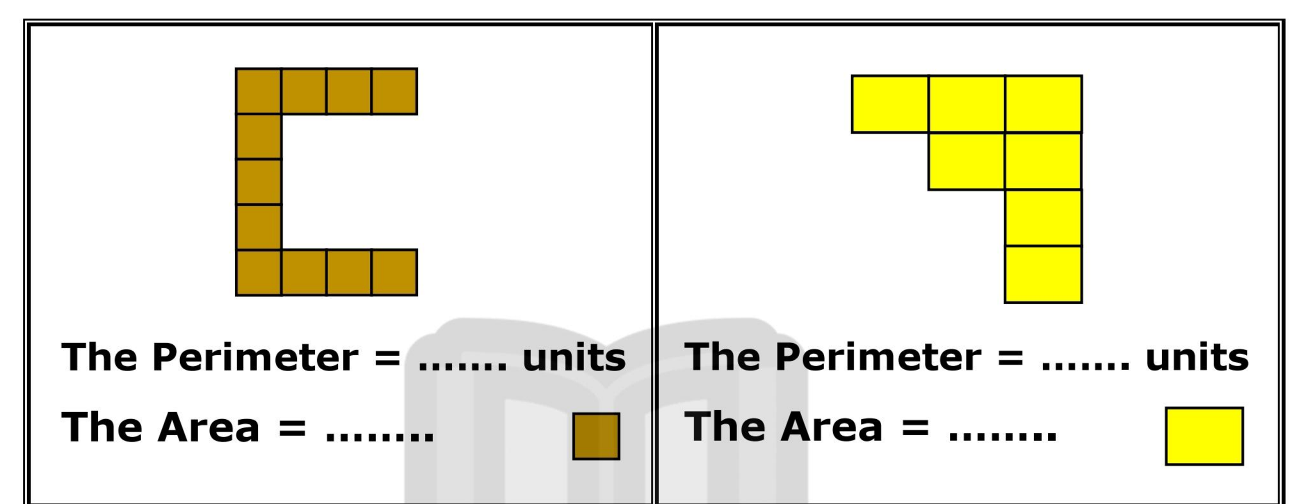
Two shapes equal in area but not congruent: ............... and ...............

Another two shapes equal in area but not congruent: ............... and .......




## • Zakroly Test On Unit 2

**1. Find :**



| | |
|---|---|
| The Perimeter = ……. units | The Perimeter = ……. units |
| The Area = …….. | The Area = …….. |

**2. Complete :**

a) The perimeter of a triangle whose side lengths are 6 cm, 7 cm, 8 cm equals ………………………………

b) The perimeter of a square whose side length is 4 cm equals ……………………………………………………

c) The perimeter of a rectangle with the length = 8 cm and width = 12 cm equals:

……………………………………………………………………

d) If the perimeter of a square is 40 cm, then its length = ……………………………………………………… cm